

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE (Case No. 97,223-D)



PATENT

	In Application Of:)
	D. La	nsing Taylor)
) Examiner: Padmanabhan, K.
	Serial No.	09/468,673)
) Group Art Unit: 1641
	Filed:	December 21, 1999)
		ŕ)
	For:	Miniaturized Cell Array Meth	nods)
		and Apparatus for Cell-Based	•
		Screening	,
Panin Pafe	06/22/2001 FTULU	9	,
DA#:132490	06/22/2001 ETULU Name/Number:094	8673	
FC: 704		\$5.00 CR Information Dis	sclosure Statement

Assistant Commissioner For Patents Washington, D.C. 20231

FC: 704

FC: 704

Repln. Ref: 06/22/2001 ETULU1 DA#:132490 Name/Number:094686 06/22/2001 ETULU1 0011580500 Name/Number:09468673 \$55.00 CR

Dear Sir:

Pursuant To 37 C.F.R. Section 1.97 - 1.99, the Applicant wishes to make the following references of record in the above-identified application. This information disclosure statement is in compliance with the continuing duty of candor as set forth in 37 C.F.R. Section 1.56. Copies of the references cited below are enclosed. These references are also listed on the enclosed PTO Form 1449.

In the judgment of the undersigned, portions of the listed references may be material to the examiner's consideration of the presently pending claims. However, the references have not been reviewed in sufficient detail to make any other representation and, in particular, no representation is intended as to the relative importance of any portion of the references. This statement is not a representation that the listed references have effective dates early enough to be "prior art" within the meaning of 35 U.S.C. Section 102 or Section 103.

McDonnell, Boehnen, Hulbert & Berghoff 300 S. Wacker Drive, Suite 700 Chicago, IL 60606

312-913-0001

FEES	No fee is owed by the applicant(s). The IDS Fee of \$240.00 under 37 C.F.R. § processing fee for color drawings of \$130. herewith.	4		
METH □	Attached is a check in the amount of \$425.0 Charge Deposit Account No. 13-2490 in the communication is enclosed for that purpose.	amount of \$. (A duplicate copy of this		
commi		ny overpayment in connection with this A duplicate copy of this communication is		
CERTIFICATE OF MAILING UNDER 37 CFR § 1.10: The undersigned hereby certifies that this Transmittal Letter and the papers, as described herein-above, are being deposited with the United States Postal Service with sufficient postage as "Express Mail Post Office to Addressee" in an envelope addressed to: Asst. Commissioner for Patents, Washington, D.C. 20231-9999, on this				
		Respectfully submitted,		
Date:	6/20/07	David S. Harper Registration No. 42,636		
-	none: 312-913-0001	McDonnell Boehnen Hulbert & Berghoff 300 South Wacker Drive		
Facsin	nile: 312-913-0002	Chicago, IL 60606		



- 1. Lockhart et al., U.S. Patent No. 5,556,752, Issued September 17, 1996.
- 2. Pirrung et al., U.S. Patent No. 5,143,854, Issued September 1, 1992.
- 3. Georger Jr. et al., U.S. Patent No. 5,324,591, Issued June 28, 1994.
- 4. Carlotta et al., U.S. Patent No. 5,233,369, Issued August 3, 1993.
- 5. Carlotta et al., U.S. Patent No. 5,486,855, Issued January 23, 1996.
- 6. Hoisington et al., U.S. Patent No. 5,502,467, Issued March 26, 1996.
- 7. Hemstreet et al., U.S. Patent No. 4,982,739, Issued January 8, 1991.
- 8. Boris et al., U.S. Patent No. 5,031,797, Issued July 16, 1991.
- 9. Zanzucchi et al., U.S. Patent No. 5,585,069, Issued December 17, 1996.
- 10. Swedberg et al., U.S. Patent No. 5,571,410, Issued November 5, 1996.
- 11. Kaltenbach et al., U.S. Patent No. 5,500,071, Issued March 19, 1996.
- 12. Craighead et al., U.S. Patent No. 4,344,816, Issued August 17, 1982.
- 13. Kelly et al., U.S. Patent No. 5,581,487, Issued December 3, 1996.
- 14. Chalfie et al., U.S. Patent No. 5,491,084, Issued February 13, 1996.
- 15. Harpold et al., U.S. Patent No. 5,436,128, Issued July 25, 1995.
- 16. Harpold et al., U.S. Patent No. 5,401,629, Issued March 28, 1995.
- 17. Dovichi et al., U.S. Patent No. 5,567,294, Issued October 22, 1996.
- 18. Reinhartz et al., U.S. Patent No. 5,527,673, Issued June 18, 1996.
- 19. Winkler, et al., U.S. Patent No. 5,384,261, Issued January 24, 1995.
- 20. Hubbell, et al., U.S. Patent No. 5,278,063, Issued January 11, 1994.
- 21. McGall, et al., U.S. Patent No. 5,412,087, Issued May 2, 1995.
- 22. James W. Bacus, U.S. Patent No. 4,741,043, Issued August 9, 1994.
- 23. Schroeder, et al., U.S. Patent No. 5,355,215, Issued October 11, 1994.

- 24. Peter J. Coassin, U.S. Patent No. 5,405,585, Issued April 11, 1995.
- 25. Wilding, et al., U.S. Patent No. 5,304,487, Issued April 19, 1994.
- 26. Matsuda, et al., U.S. Patent No. 5,202,227, Issued April 13, 1993.
- 27. Gerd Grenner, U.S. Patent No. 4,906,439, Issued March 6, 1990.
- 28. Tse W. Chang, U.S. Patent No. 5,100,777, Issued March 31, 1992.
- 29. Wilding, et al., U.S. Patent No. 5,637,469, Issued June 10, 1997.
- 30. Tse-Wen Chang, U.S. Patent No. 4,591,570, Issued May 27, 1986.
- 31. Georger, Jr., et al., U.S. Patent No. 5,510,628, Issued April 23, 1996.
- 32. Akaike, et al., U.S. Patent No. 5,470,739, Issued November 28, 1995.
- 33. Robert J. Klebe, U.S. Patent No. 5,108,926, Issued April 28, 1992.
- 34. Clapper, et al., U.S. Patent No. 5,512,474, Issued April 30, 1996.
- 35. Cozzette, et al., U.S. Patent No. 5,200,051, Issued April 6, 1993.
- 36. Wilding, et al., U.S. Patent No. 5,498,392, Issued March 12, 1996.
- 37. John Hosier, U.S. Patent No. 5,326,691, Issued July 5, 1994.
- 38. Jansson, et al., U.S. Patent No. 4,673,988, Issued June 16, 1987.
- 39. Ivarsson, et al., U.S. Patent No. 5,313,264, Issued May 17, 1994.
- 40. Shmuel Shoshan, U.S. Patent No. 4,656,130, Issued April 7, 1987.
- 41. Akong, et al., U.S. Patent No. 6,057,114, Issued May 2, 2000.
- 42. Wilding, et al., U.S. Patent No. 5,587,128, Issued December 24, 1996.
- 43. D. Lansing Taylor, et al., U.S. Patent No. 6,103,479, Issued August 15, 2000.

Foreign Documents:

- 44. Thastrup et al., International Published PCT Application No. WO 96/23898, published 8/8/96.
- 45. Gestrelius, et al., International Published PCT Application No. WO 96/09589, published 3/28/96.
- 46. Haselhoff, et al., International Published PCT Application No. WO 96/27675, published 9/12/96.

47. Ward and Chalfie, International Published PCT Application No. WO 95/21191, published 8/10/95.

Article References:

- 48. Mrkisch and Whitesides, Using self-assembled monolayers to understand the interactions of man-made surfaces with proteins and cells. Ann. Rev. Biophys. Biomol. Struct. 25:55-78 (1996).
- 49. Kleinfeld et al., Controlled outgrowth of dissociated neurons on patterned substrates. J. Neuroscience 8:4098-4120 (1988).
- 50. Craighead et al., Textured thin-film Si solar selective absorbers using reactive ion etching. Appl. Phys. Lett. 37:653-655 (1980).
- 51. Craighead et al., Textured surfaces: Optical storage and other applications. J. Vac. Sci. Technol. 20:316-319 (1982).
- 52. Suh et al., Morphology dependent contrast measurements of microscopically textured germanium films. Proc. SPIE 382:199-201 (1983).
- 53. Singhvi et al., Engineering cell shape and function. Science 264:696-698 (1994).
- 54. Sigal et al., A self-assembled monolayer for the binding and study of histidine-tagged proteins by surface plasmon resonance. Anal. Chem. 68:490-497 (1996).
- 55. Aplin and Hughes, Protein-derivatised glass coverslips for the study of cell-to-substratum adhesion. Anal. Biochem. 113:144-148 (1981).
- 56. Kahl et al., Validation of a high throughput scintillation proximity assay for 5-hydroxytryptamine_{1E} receptor binding activity. J. Biomol. Screening 2:33-40 (1997).
- 57. Schroeder and Neagle, FLIPR: A new instrument for accurate, high throughput optical screening. J. Biomol. Screening 1:75-80 (1996).
- 58. Proffitt et al., A fluorescent digital image microscopy system for quantifying relative cell numbers in tissue culture plates. Cytometry 24:204-213 (1996).
- 59. Taylor et al., The new vision of light microscopy. American Scientist 80:322-335 (1992).
- 60. Wang, Fluorescent analog cytochemistry: Tracing functional protein components in living cells. Methods in Cell Biology 29:1-12 (1989).
- 61. Chalfie et al., Green fluorescent protein as a marker for gene expression. Science 263:802-805 (1994).
- 62. Morise et al., Internolecular energy transfer in the bioluminescent system of Aequorea. Biochem. 13:2656-2662 (1974).
- 63. Ward et al., Spectrophotometric identity of the energy transfer chromophores in Renilla and Aequorea green fluorescent proteins. Photochem. And Photobiol. 31:611-615 (1980).
- 64. Rizzuto et al., Rapid changes of mitochondrial Ca²⁺ revealed by specifically targeted recombinant aequorin. Nature 358:325-327 (1992).
- 65. Kaether and Gerdes, Visualization of protein transport along the secretory pathway using green fluorescent protein. FEBS Letters 369:267-271 (1995).

- 66. Hu and Cheng, Expression of Aequorea green fluorescent protein in plant cells. FEBS Letters 369:331-334 (1995).
- 67. Davis et al., A nuclear GFP that marks nuclei in living Drosophila embryos: Maternal supply overcomes a delay in the appearance of zygotic fluorescence. Develop. Biol. 170:726-729 (1995).
- 68. Haselhoff et al., Removal of a cryptic intron and subcellular localization of green fluorescent protein are required to mark transgenic Aradopsis plants brightly. Proc. Natl. Acad. Sci. 94:2122-2127 (1997).
- 69. Brejc et al., Structural basis for dual excitation and photoisomerization of the Aequorea victoria green fluorescent protein. Proc. Natl. Acad. Sci. 94:2306-2311 (1997).
- 70. Cheng et al., Use of green fluorescent protein variants to monitor gene transfer and expression in mammalian cells. Nature Biotechnology 14:606-609 (1996).
- 71. Heim and Tsien, Engineering green fluorescent protein for improved brightness, longer wavelengths and fluorescence resonance energy transfer. Current Biology 6:178-182 (1996).
- 72. Ehrig et al., Green-fluorescent protein mutants with altered fluorescence excitation spectra. FEBS Letter 367:163-166 (1995).
- 73. Prime and Whitesides, Self-assembled organic monolayers: Model systems for studying adsorption of proteins at surfaces. Science 252:1164-1167 (1991).
- 74. Lopez et al., Convenient methods for patterning the adhesion of mammalian cells to surfaces using self-assembled monolayers of alkanethiolates on gold. J. Am. Chem. Soc. 115:5877-5878 (1993).
- 75. Grabarek and Gergely, Zero-length cross-linking procedure with the use of active esters. Anal. Biochem. 185:131-135 (1990).
- 76. McKenzie, et al., Development of a bifunctional crosslinking agent with potential for the preparation of immunotoxins. J. Prot. Chem. 7:581-592 (1988).
- 77. Brinkley, A brief survey of methods for preparing protein conjugates with dyes, haptens, and cross-linking reagents. Bioconjugate Chem. 3:2-13 (1992).
- 78. Frisch et al., Synthesis of short polyoxyethylene-based heterobifunctional cross-linking reagents. Application to the coupling of peptides to liposomes. Bioconjugate Chem. 7:180-186 (1996).
- 79. Thevenin et al., A novel photoactivatable cross-linker for the functionally-directed region-specific fluorescent labeling of proteins. Eur. J. Biochem. 206:471-477 (1992).
- 80. Goldmacher et al., Photoactivation of toxin conjugates. Bioconjugate Chem. 3:104-107 (1992).
- 81. Bailey et al., Enhancement of axial resolution in fluorescence microscopy by standing-wave excitation. Nature 366:44-48 (1993).
- 82. Farkas et al., Multimode light microscopy and the dynamics of molecules, cells and tissues. Ann. Rev. Physiol. 55:785-817 (1993).

- 83. Taylor et al., Automated interactive microscopy: Measuring and manipulating the chemical and molecular dynamics of cells and tissues. Proc. SPIE 2678:15-27 (1996).
- 84. Sawin et al., Photoactivation of fluorescence as a probe for cytoskeletal dynamics in mitosis and cell motility, pp. 405-419, In Biological Techniques: Fluorescent and Luminescent Probes for Biological Activity, ed. W.T. Mason, Academic Press, (1993).
- 85. Pillai, Photolytic deprotection and activation of functional groups, p. 225-323, In Organic Photochemistry volume 9, ed. A. Padwa, Marcel Dekker, Inc. NY, (1987).
- 86. Yen et al., Synthesis of water-soluble copolymers containing photocleavable bonds. Makromol. Chem. 190:69-82 (1989).
- 87. Pillai, Photoremovable protecting groups in organic synthesis. Synthesis, January (1980), pp. 1-26.
- 88. Self and Thompson, Light activatable antibodies: Models for remotely activatable proteins. Nature Medicine 2:817-820 (1996).
- 89. Senter, Novel photocleavable protein crosslinking reagents and their use in the preparation of antibody-toxin conjugates. Photochem. And Photobiol. 42:231-237 (1985).
- 90. Channavajjala et al., A simple method for measurement of cell-substrate attachment forces: Application to HIV-1 tat. J. Cell Sci. 110:249-256 (1997).
- 91. Bell Jr. et al., Formaldehyde sensitivity of a GFAP epitope, removed by extraction of the cytoskeleton with high salt. J. Histochem. And Cytochem. 35:1375-1380 (1987).
- 92. Poot et al., Analysis of mitochondrial morphology and function with novel fixable fluorescent stains. J. Histochem. And Cytochem. 44:1363-1372 (1996).
- 93. Johnson, Aldehyde fixatives: Quantification of acid-producing reactions. J. Electron Microscopy Tech. 2:129-138 (1985).
- 94. Giuliano et al., Fluorescent protein biosensors: Measurement of molecular dynamics in living cells. Ann. Rev. Biophys. Biomol. Struct. 24:405-434 (1995).
- 95. Harootunian et al., Movement of the free catalytic subunit of cAMP-dependent protein kinase into and out of the nucleus can be explained by diffusion. Mol. Biol. of the Cell 4:993-1002 (1993).
- 96. Post et al., A fluorescent protein biosensor of myosin II regulatory light chain phosphorylation reports a gradient of phosphorylated myosin II in migrating cells. Mol. Biol. of the Cell 6:1755-1768 (1995).
- 97. Gonzalez and Tsien, Voltage sensing by fluorescence resonance energy transfer in single cells. Biophysics J. 69:1272-1280 (1995).
- 98. Swaninathan et al., Photobleaching recovery and anisotropy decay of green fluorescent protein GFP-S65T in solution and cells: Cytoplasmic viscosity probed by green fluorescent protein translational and rotational diffusion. Biophysics J. 72:1900-1907 (1997).
- 99. Haugland, Fluorescent tracers of cell morphology and fluid flow, in Handbook of Fluorescent Probes and Research Chemicals, 6th edition, ed. by Spence, Molecular Probes, Inc. Eugene OR, pp. 325-331 (1996).
- 100. McNeil et al., A method for incorporating macromolecules into adherent cells. J. Cell Biol. 98:1556-1564 (1984).

- 101. Clarke and McNeil, Syringe loading introduces macromolecules into living mammalian cell cytosol. J. Cell Science 102:533-541 (1992).
- 102. Clarke et al., Cytoplasmic loading of dyes, protein and plasmid using an impact-mediated procedure. BioTechniques 17:1118-1125 (1994).
- 103. Denk et al., Two-photon laser scanning fluorescence microscopy. Science 248:73-76 (1990).
- 104. Willner and Rubin, Control of the structure and functions of biomaterials by light. Angew. Chem. Int. Ed. Engl. 35:367-385 (1996).
- 105. H.M. McConnell, et al., The Cytosensor Microphysiometer: Biological Applications of Silicon Technology," Science, Vol. 257, September (1992), pp. 1906-1912.
- 106. David A. Stenger, et al., "Coplanar Molecular Assemblies of Amino and Perfluorinated Alkylsilanes: Characterization and Geometric Definition of Mammalian Cell Adhesion and Growth," J. Am. Chem. Soc., (1992), 114, pp. 8435-8442.

Co-Pending Application

Jung, et al., U.S. Patent Application No. 09/401,212, Filed on September 22, 1999.

By:

David S. Harper

Respectfully Submitted,

Reg. No. 42,636

	This Information Disclosure Statement is being filed:			
	within three months of the filing date of a national application; within three months of the date of entry into the national stage as set forth in 37 C.F.R. § 1.491 in an international application; or before the mailing date of a first Office Action on the merits. 37 C.F.R. §1.97 (b)			
\boxtimes	after three months of the filing date of a national application, or the date of entry into the national stage as set forth in 37 C.F.R. § 1.491 in an international application; or after the mailing date of a first Office Action on the merits, but <u>before</u> the mailing date of a Final Action under 37 C.F.R. § 1.113 or a Notice of Allowance under 37 C.F.R. § 1.311 (whichever occurs first), and includes (37 C.F.R. § 1.97 (c):			
	the Certification under 37 C.F.R. § 1.97(e) (see "Certification" below)			
OR				
	the fee of \$240 set forth in 37 C.F.R. § 1.17(p) (see "Fees" below).			
	after a Final Action under 37 C.F.R. § 1.113 or a Notice of Allowance under 37 C.F.R. § 1.311 (whichever occurs first), but before, or simultaneously with, the payment of the issue fee, and includes the Certification under 37 C.F.R. § 1.97(e) (see "Certification" below), and the Petition Fee set forth in 37 C.F.R. § 1.17(i) (see "Fees" and "Method of Payment of Fees" below). Applicants hereby petitions for consideration of the Information Disclosure Statement submitted herewith and the accompanying references in examination of the subject patent application.			
CERT	IFICATION			
	The undersigned hereby certifies that each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign patent application not more than three months prior to the filing of the Information Disclosure Statement.			
	The undersigned hereby certifies that no item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign patent application or, to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of the Information Disclosure Statement.			
200 C W	calcar Drive Suite 700			